

Updated Informative Digest

AMENDMENTS TO THE CALIFORNIA ON-ROAD MOTORCYCLE REGULATION

Sections Affected: Amendments were made to sections 1900, 1958, and 1965, title 13, California Code of Regulations (CCR) and the incorporated “Exhaust Emission Standards and Test Procedures - Motorcycles Manufactured on or After January 1, 1978” and “Emission Control and Smog Index Label Specifications.”

Background

The Air Resources Board (ARB) adopted the first on-road motorcycle regulation in 1975 to reduce ozone-forming emissions from this mobile source category. The regulation established exhaust and evaporative emission standards for hydrocarbon (HC) beginning with the 1978 model year. Depending on the motorcycle engine size, the original HC exhaust standards ranged from 5.0 grams per kilometer (g/km) to 14.0 g/km.

The regulation established standards for motorcycles with engines as small as 50 cubic centimeters (cc). Because in this rulemaking staff proposes to amend the standards only for Class III motorcycles (280 cc or greater), the remainder of this discussion will focus on the standards that currently apply to this class of on-road motorcycles.

In 1984, the ARB amended the model year 1985 HC standard to give manufacturers more flexibility. The new standards for model year 1985 and beyond focused on the Class III category (280 cc and above): 280 to 699 cc engines were limited to 1.0 g/km, while 700 cc and larger motorcycles were limited to 1.4 g/km HC. The ARB established provisions to allow manufacturers to meet these limits on a “corporate average” basis, with no individual engine family allowed to exceed 2.5 g/km HC.

Additionally, in 1984 the Board directed the ARB staff to revisit the regulation when catalytic and other emissions control technologies had matured to the point that it would be feasible to apply these technologies to on-road motorcycles. Significant strides in controlling emissions from internal combustion engines have taken place since then, with developments in the automotive sector gradually being applied to motorcycles. This is particularly true in Europe and Asia, where engine modifications, fuel injection, secondary pulse-air injection, and catalytic converters are used in significant numbers of on-road motorcycles. On the other hand, the ARB emission standards for motorcycles have not kept pace with the rate at which emission control technologies have developed. Therefore, ARB believes it is appropriate to amend the existing standards to the proposed levels, which reflect the use of reasonably available technologies.

Description of the Regulatory Action

The primary impetus for the proposed amendments comes from the ARB's obligations under the State Implementation Plan for Ozone ("ozone SIP") adopted by the Board in 1994. The ozone SIP, which represents California's commitment to attain and maintain the federal ambient air quality standard for ozone in greater Los Angeles (South Coast Air Basin) and the rest of the state, was approved by U.S. EPA in 1995. The ozone SIP includes measures to reduce emissions from mobile sources under State control (including cars, heavy-duty trucks, and off-road equipment), as well as federal assignments to control emissions from sources under exclusive or practical federal control (such as airplanes, marine vessels, and locomotives). The ozone SIP also relies upon the development of additional technology measures (the mobile source "black box") to provide additional emission reductions needed for attainment in the South Coast Air Basin.

Although on-road motorcycles have been regulated since the 1978 model year, the ozone SIP does not specifically plan for emission reductions from on-road motorcycles. The staff's proposal for on-road motorcycles is a new emission reduction effort reflecting reasonably available technologies. The staff's proposal offers additional, cost-effective emission reductions needed to continue progress towards attainment of the federal ambient ozone standard. The additional emission reductions will also ensure continued progress towards meeting State and new federal air quality standards for ozone and particulate matter.

The ARB amended regulations apply to all manufacturers of motorcycle engines, as well as manufacturers of complete motorcycles, which make products for sale in California. The amended regulations also affect points-of-sale, such as motorcycle dealers, other retailers, and distributors.

The amendments maintain the regulatory approach used in the existing regulation to limit exhaust emissions. The amended regulations will maintain the current standards until model year 2004, when the first of two tiers of new standards becomes effective. The Tier-1 standard for model year 2004 is 1.4 g/km of hydrocarbon plus oxides of nitrogen (HC+NOx). Beginning in model year 2008, the Tier-2 standard of 0.8 g/km HC+NOx becomes effective. Manufacturers would be allowed to meet the standards on a corporate average basis, with all engine families limited to no more than 2.5 g/km HC+NOx.

For small-volume manufacturers, the amended regulations provide that the Tier-1 standard of 1.4 g/km HC+NOx becomes effective starting in model year 2008. Small-volume manufacturers are defined as those that have combined California Class I (50 cc to 169 cc), Class II (170 cc to 279 cc) and Class III (280 cc and greater) sales of no greater than 300 units in a model year, starting with the 2004 model year. The Tier-2 standard does not apply to small-volume manufacturers at this time; however, a planned technology review in 2006 may provide sufficient information to justify proposing a Tier-2 standard for small-volume manufacturers at a later date.

To provide incentives for early compliance with the Tier-2 standard, the amended regulations specify a set of multiplier factors that provide extra credit to manufacturers that introduce motorcycles which meet the Tier-2 standard or a lower level earlier than the 2008 model year. The use of these credits will make it easier for a manufacturer to comply with the corporate emissions average standard in 2008.

A sunset review provision, as required by Governor's Executive Order W-144-97, was included in the amended regulation. This provision requires the ARB, in consultation with the Secretary for Environmental Protection, to review the regulation within five years of the effective date of adoption or date of implementation, whichever comes later. During the review, the ARB will determine whether the amendments should be retained, revised, or repealed. It should be noted that this sunset review provision is separate and not the same as the planned technology review in the 2006 timeframe, which is an ARB commitment that is not part of the amended regulatory language.

Amended language for sections 1900 and 1965, title 13, California Code of Regulations (CCR) was also included to be consistent with the regulatory action to lower exhaust standards for on-road motorcycles. Section 1900 was amended to define "motorcycle engine." Section 1965 was amended to clarify ARB's existing enforcement policy that the emissions labeling and certification program applies to motorcycle engines. Section 1965 was also amended to clarify the labeling requirements for motorcycles and motorcycle engines that comply with the early-compliance credits provision of this regulatory action (section 1958(g)).

Comparable Federal Regulations

Under Title II of the federal Clean Air Act (CAA), the U.S. EPA has adopted comprehensive regulations to control emissions from new motor vehicles and motor vehicle engines, including on-road motorcycles (see Title 40, Code of Federal Regulations, Part 86 (40 CFR 86)). However, both state law and CAA section 209(b) authorize California to establish its own standards that differ from the federal standards.

While similar in purpose and scope, the California exhaust emission standards are more stringent than the comparable federal requirements in both magnitude and the pollutants regulated (i.e., HC+NO_x rather than HC-only). The current federal exhaust emission standard applicable to the engine size class (Class III) affected by the amendments is 5.0 g/km (HC only). The federal standard for carbon monoxide (CO) is identical to California's existing standard (12 g/km). The more stringent California on-road motorcycle program is necessary to help attain the national and state ambient ozone standards.